Dvorak Developments

Dvorak Developments #52 (Volume 15, #2) • Summer 1988

Remembering Dr. Dvorak

by Mary McKernan

A telephone conversation the other day with **Hermione Dvorak**, widow of **Dr. August Dvorak**, gave me a better understanding than I'd had previously of the countless frustrations endured by Dr. Dvorak through the years as he sought to replace the Qwerty keyboard – that "sacred cow" entrenched in the businesses of the country – with his "simplified" design.

In 1974, I interviewed Dr. Dvorak shortly after the Smith Corona typewriter company presented him with a prototype of their new typewriter which, as a $15 option, would come with the simplified keyboard layout. At that time, he minimized the frustrations, preferring to stress the joy of beholding this tangible evidence of recognition at last. Moreover, he showed no resentment over the fact that what had been called the DSK (for Dvorak Simplified Keyboard) was now called the ASK (for American Simplified Keyboard) by Smith Corona.

Dr. Dvorak was not well the day I called to interview him for an article in *Seattle Business* magazine on the occasion of his upcoming 80th birthday. But when I offered to return at another time, he would not hear of it. "Please stay," he said. "You're just what I need. I've been so bored lately."

Reliving the past did seem to revitalize him. Briskly, he ushered me unto his study, asking Hermione to bring in reference books and files so we could check dates and facts he might have forgotten.

At that time, he showed no bitterness over former defeats. On the contrary, he related some of the obstacles with humor, his eyes twinkling in remembrance.

Dr. Dvorak died the following year, on October 10, 1975.

What Hermione Dvorak recalls of their years together were the deep depressions her husband suffered after each setback. "He would be so devastated that I would try to convince him to give up," she said. "But it was no use. He had such faith in his invention and, as he always said, he was not known as a stubborn Czech for nothing."

The setbacks, I knew, were constant. Fate had placed him in an unenviable time frame. His keyboard design was patented in 1932, in the depths of the Great Depression; his product hit the market too late in one respect and too early in another.

"August was Director of Research at the University of Washington," Hermione recalled, "but all University staff members had to take decreases in salaries, so we had no money to finance his project. Nobody else had any money either. Typists lucky enough to have jobs did not wish to endanger their

He showed no bitterness over former defeats. On the contrary, he related some of the obstacles with humor.

positions by petitioning for converted keyboards, business schools refused to consider a system that took only three months to master, and manufacturers were uninterested in re-tooling for new models when they couldn't even sell old ones still on hand."

In an attempt to break through barriers in another way, the "stubborn Czech" trained a group of volunteer typists from the Seattle area for the annual International Typewriting contests. From 1933 to 1941, these typists set 26 international records and won four grand championships.

At first glance, it seems incredible that such achievements had so little effect on business communities across the country. But no sooner had the nation begun to recover from economic disaster, the U.S. started toward war. With hostilities imminent, changing the typewriter keyboard registered as a low priority.

Dr. Dvorak was in the Navy during the war, and supplied the DSK-equipped typewriters for typewriting tests conducted by the Navy. He showed me some of the records of the tests, saying the results were typical: Within two weeks, operators retrained from Qwerty to the DSK were 74 percent more productive, from a

Continued on Page 6

Letters

Free Conversion

I am frustrated at being unable to find a public domain Dvorak program for PC-compatible computers.

Such programs are available for Atari, Commodore, Macintosh and other popular systems. But for PCs, the world's most popular system, one must buy a commercial program for the "privilege" of dumping Qwerty.

One of these days, a Dvorak advocate with sufficient programming knowledge will come along and change that.

Meanwhile, why use *DvDv* to review commercial Dvorak programs for other systems? The PD programs work just as well. The only reason people shell out lots of bucks for Dvorak is they don't have access to PD databases.

If you really want to promote Dvorak, why not collect the various PD programs and offer them on disk for a few dollars each? You'd cover your costs, and you'd encourage a lot more people to try Dvorak. Isn't that the idea?

Andrew Zarchy
Pacific Grove, CA

We haven't yet heard of a workable public domain Dvorak conversion program for the PC, and I am surprised that we haven't. In my view, though, add-on programs to convert computers to Dvorak are not *the ideal solution. The best way to really get the Dvorak off the ground is for hardware manufacturers to go to just a little bit of effort and build the Dvorak into every keyboarded machine made. People that wanted Qwerty would have it; people who wanted Dvorak (or just wanted to try it) would only have to push a button or hit a few keys and they would have it for no extra charge or trouble.*

So far, a few machines do have this capability, and their numbers are growing (the Apple IIc, the Laser 128 and the Silver Reed EZ-50 typewriter are the pioneers). Until all manufacturers have built-in support for the ANSI-standardized "alternate" keyboard, add-on keyboards and remapping programs are it, and DvDv *will continue to make note of them as we receive information, whether the product is commercial or public domain (freely available for only the cost of the disk or the time to download it from a database via modem). Our notice of Electric Dvorak in this issue's* **Product Alerts** *is a case in point — it is the first PD Dvorak program I can remember getting from a software publisher.*

It would not be feasible for us to stock the available PD programs for every computer, even if we did have them. We would need some way to copy the disks (either by using an expensive service, or having one each of every type of computer in the office). "Covering our costs" would require at least $20 per disk in the small volume that these non-"world's most popular computers" would generate. Sorry.

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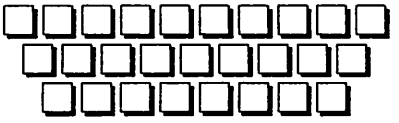
Letters should be addressed to Randy Cassingham, Editor, Dvorak Developments, PO Box 1895, Upland CA 91785. While not all letters can be personally answered, the most interesting will be printed here after editing for length and clarity.



Dvorak Developments .....ISSN 0743-4200

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Published Quarterly (Winter, Spring, Summer and Fall) by Freelance Communications, PO Box 1895, Upland CA 91785.

Subscriptions: $12.00 per year in North America (for foreign addresses, add $4.00 per year for special handling and air mail delivery. Payment must be made in U.S. funds).

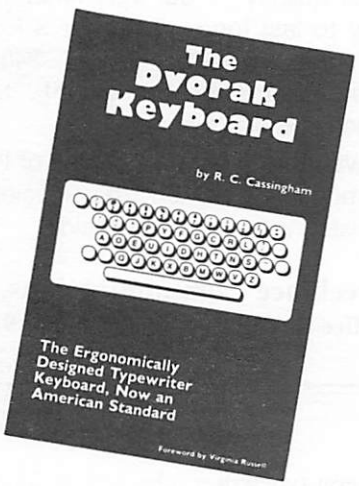
The Dvorak Keyboard...

"... is one of the most fascinating books I've had the pleasure to read lately. Cassingham really did his research on this book."

– Mark Nolan, Information Marketing Newsletter

"If you are after good, useful, hard-to-find (Dvorak) keyboard information, this book will be invaluable to you. "

– David McLanahan, ComputerSmyth



The Dvorak Keyboard will answer your questions about the Dvorak keyboard, or we'll give you your money back.* Written by *Dvorak Developments* editor Randy Cassingham, *The Dvorak Keyboard* is the **only** book of its kind. Everything you want to know about the Dvorak is here in one place. Only $12.95 per copy, plus $1 shipping (for fast airmail delivery, add an extra dollar). California residents please add 78¢ sales tax per copy.

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Bibliographic Notes

Word Processing: Quality Clinic, November 25, 1985. We just found out about the interesting four-page article in this newsletter put out by the Bureau of Business Practice. "Move Over Qwerty" is a good introduction to the Dvorak and documents the ease in retraining from Qwerty.

MacUser, June 1988. An introduction to what the Dvorak is, as a way of introducing the "Electric Dvorak" program for the Macintosh (see the Product Alerts section in this issue).

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PCKey is a small, memory-resident program for your IBM PC/XT/AT or "true" compatible. It converts your computer to a Dvorak layout instantly, and it works with most any other program you might use.

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From the Editor's Keyboard

by Randy Cassingham

Q&A

I often get letters from people asking some pretty interesting and insightful questions about the Dvorak layout and keyboarding in general. I thought, then, I would spend the next few columns answering some of the more interesting and most-asked questions.

Clearly, computers are advancing rapidly and are getting "smarter" (read: programmers are learning new ways to exploit the power of available hardware) all the time. Isn't true speech recognition just around the corner, an advance which would make keyboards ob-

"Totally spontaneous, unrestricted speech recognition by computers is still 10, 20, 30 years away"

solete? And, if so, why bother to change to Dvorak for that brief time?

Science, a widely read journal, reports that **Kai-Fu Lee,** a computer science graduate student at Carnegie Mellon University, appears to have made the most significant recent advances in speech recognition. Based on several breakthroughs, Lee's experimental system, Sphinx, is up to 96% accurate and has what is considered a large vocabulary: 997 words.

Though Sphinx requires special hardware, Lee's system could certainly form the basis for future personal computer speech recognition systems. But Lee's adviser, **Raj Reddy,** is quite cautious: "Totally spontaneous, unrestricted speech (recognition by computers) is still 10, 20, 30 years away," he says. Reddy has been working on speech recognition for more than 15 years and is a past president of the American Association for Artificial Intelligence.

Even if full speech recognition became widely available in just 10 or 20 years, a switch to Dvorak **now** would boost keyboard productivity so much, the payoff would be enough to justify conversion even for that relatively short time span.

I'm afraid, then, that thinking that speech recognition will make conversion to Dvorak unnecessary or unprofitable is fallacious.

Options

Another question that will pop up even more, with this issue's article on the ANSI standard and the diagrams found on that page, is Why are there blank keys on the layout diagrams?

The blank keys are placeholders for special keys, such as the non-typewriter characters found on PC keyboards, such as the backslash (\) and {braces}.

The placement of these keys is "optional" according to the American National Standards Institute (ANSI), which issued the Dvorak and Qwerty layout standards. The ANSI Qwerty layout also has a similar system of blank keys (and, like Dvorak, options for some characters, such as an alternative to place either the ^ or ¢ over the '6' key) to take care of special circumstances.

The keys on actual machines, then, really aren't blank – they have special characters assigned to them or, if the special characters aren't needed, the keys are often just omitted.

She's back

I'm happy to welcome Dvorak expert and consultant **Virginia Russell** back to these pages. Her busy schedule has kept her from supplying us with her interesting insights on the Dvorak's progress as it migrates to the nation's keyboards. As a working member of the subcommittee that is responsible for the Dvorak ANSI standard, she provides first-hand information on that process in this issue. I hope she will be able to continue to contribute articles to future issues.

Now Available

Several mint, autographed hardbound copies of **Dr. August Dvorak's** ground-breaking treatise on the 'science' of typewriting, ***Typewriting Behavior,*** are now available from Freelance Communications. **This is the book** which Dr. Dvorak and his colleagues used to introduce the Dvorak Keyboard to the world in 1936.

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Product Overviews

Product overviews are detailed descriptions of Dvorak-related products. The regular "for sale" version of the product is tested, then described in full so that readers can make intelligent choices on what products fit their needs. Opinions expressed in the overview are those of the author.

Dvorak Keyboard System

Dvorak on the Radio Shack "Model 100"

By Roman Kowalczuk

Description: Memory-resident keyboard redefinition software for Radio Shack TRS-80 Models 100/102 and 200, and NEC 8201 portable computers.

Supplier: Tri-Mike Network East, PO Box 372, Peterborough NH 03458. Price $24.95.

Machine used for test: Model 100 with 32K RAM; PCSG "Super ROM" integrated software installed.

While it has traditionally been hard to get information in general, let alone Dvorak information, on non-MS-DOS laptop computers, Dvorak typists who use the Radio Shack Model 100, 102, and similar portables have one problems solved: how to switch these machines to Dvorak. The Dvorak Keyboard System (DKS) from Tri-Mike Network East makes it easy.

For those not familiar with the Model 100 line of computers, they are small, completely portable systems made for, and sold by, Radio Shack since 1983. They have 40 column LCD screens and include several standard "built-in" programs in read-only memory (ROM). Since everything, including the operating system, is contained on ROMs, you can go from a turned-off machine to text entry in about two seconds flat.

DKS is a computer program which comes on a Model 100 audio cassette. You load it in from almost any tape recorder/player with the standard cassette cable (available at Radio Shack). You need only load in the file once and then run it, and DSK stays installed as long as power keeps the memory alive.

DKS doesn't take long to load from the cassette – only about a minute for the entire process, and if you have a disk drive you can save the program to disk after your first load. I installed the program without incident after first backing up my important files, and then clearing the memory – it likes to be "first" at power-up, so you have to back up your other BASIC programs prior to installing it the first time.

After the program runs, the program itself is deleted from memory to save memory, which is very limited on the Model 100. A keyboard "filter" is left behind in memory to switch the keyboard to Dvorak and back to Qwerty. Re-arrange the keycaps or stick on keyboard overlays to show the Dvorak layout and you are done.

Another Dvorak program for the Model 100 we tried didn't work well because it wasn't fast enough to keep up with the typist; the DKS program runs very fast, and we weren't able to out-type it. The filter which converts the keyboard to Dvorak is not very large (only 300-600 bytes, depending on what machine you have) and is compatible with most popular third party software.

I tested DKS with "Super ROM" installed. "Super" is a plug-in pack of programs that provide powerful word processors, spreadsheets and other programs. Almost all optional ROM-based programs work with DKS. DKS is fully compatible, making the Model 100 into a powerful Dvorak-equipped system which you can take almost anywhere. Fantastic.

DKS makes the Model 100 into a powerful Dvorak-equipped system which you can take almost anywhere. Fantastic.

DKS shows up as one file in the main menu, and you may turn the Dvorak layout on and off by simply selecting a menu item called "DV+" or "DV-" (short for "Dvorak on/off"). The screen blanks out momentarily, and then comes back with the filename changed. When it says "DV-", the Qwerty keyboard is active, and you may switch back to Qwerty by selecting it from the menu if for any reason you ever need it again.

The documentation is straightforward, and kept me entertained as I went through the several pages of clear, concise instructions and hints.

Although the Model 100 (and its successor, the Model 102) are both ancient as microcomputers go, and may be a bit slow for some "power" users, the flat, very short-throw keyboard has a nice feel to it and the Dvorak layout makes it even better. The files made on the road are easily ported into your home PC when you get back. Tri-Mike's Dvorak Keyboard System is a great way to go Dvorak on these popular machines.

Roman Kowalczuk operates a computerized 'bulletin board' system in Toronto, Canada. He can be contacted via the Compuserve Information Service by sending electronic mail to 71250,1423.

Dr. Dvorak

From Page 1

combination of being faster and more accurate, than on the old "standard" keyboard.

In 1957, Dr. Dvorak retired from the Navy and returned to the University of Washington, and in the decade that followed, he made some encouraging progress. Ralph Nader, the well-known consumer advocate, tested the DSK and stated that he had wasted 3,000 hours using the Qwerty keyboard. Motivational Communications, Corp. of Ontario placed DSK typewriters throughout Canada. Speedy Keyboard Enterprises, Inc., a company that sold custom built Dvorak typewriters, started the *Quick Strokes* newsletter (later renamed to ***Dvorak Developments***) to spread the word. Finally, Smith Corona became interested.

"In the end, he was pushed aside and he made no money at all from his invention. But I think what comforted him the most was that he had contributed a nice gift to American education."

When Smith Corona finally offered its typewriter with the optional Dvorak "ASK" layout, it presented Dr. Dvorak with one of their machines in a ceremony atop the Seattle Space Needle. Dr. Dvorak's eyes grew moist as he spoke of the ceremony and honors accorded him. "It's been a long haul," he said, looking off into the distance, "but I think I can see the end now." His mood was so pensive that I wasn't sure whether he was predicting that Qwerty's days were numbered, or his own.

Computers have lessened resistance to the Dvorak layout, but opposition is still holding the Dvorak back. I asked Hermione how she thought her husband would feel if he knew the fight to establish his keyboard was still going on. "I guess he'd just keep working on it," she sighed. "He was a fighter, and he had other difficulties he didn't tell you about. He fought cancer for five years, and there were troubles involved in a corporation he had formed. In the end, he was pushed aside and he made no money at all from his invention. But I think what comforted him the most was that he had contributed a nice gift to American education."

Mary McKernan is a freelance writer from Bellevue, Washington, and a member of the Society of American Travel Writers and the American Society of Journalists and Authors. She has published two other articles about her interviews with Dr. Dvorak in national magazines.

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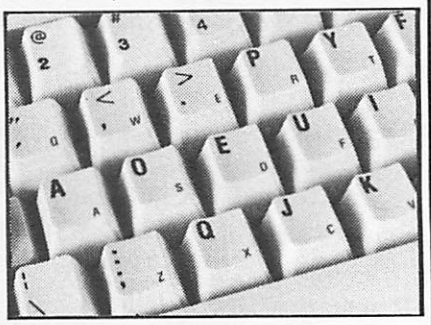

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Product Alerts

"Mavis Beacon Teaches Typing" is a new tutorial program from the **Software Toolworks**, One Toolworks Plaza, 13557 Ventura Blvd, Sherman Oaks CA 91423, (818) 907-6789, that gives the option of learning the Qwerty or Dvorak keyboards. It is available for the IBM PC/XT/AT/etc., Apple IIgs and Macintosh, Commodore Amiga, and Atari ST for $49.95, and the Apple II series and Commodore 64/128 for $39.95.

A Dvorak conversion program for the Apple Macintosh has been released by **Tom Phoenix**, PO Box 265, Portland OR 97207-0265. "Electric Dvorak" is said to work on all Macs, including the SE and II, with System file version 4.0 or later. A public domain program, it is available free from many "bulletin boards" and user groups, or for $5 to cover copying and postage from Tom Phoenix.

Printwheel Specialties, 3136 Castle Street, Honolulu HI 96815, (808) 734-7717, has taken over the manufacture of the Dvorak "balls" for IBM Selectric typewriters from Camwil. The elements, which convert the Selectric by rearranging the characters on the element rather than in the typewriter itself, are $85 each.

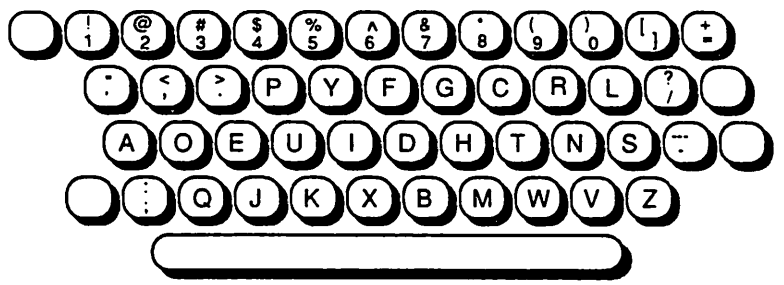
Up for Renewal

Dvorak Layout and ANSI Standardization

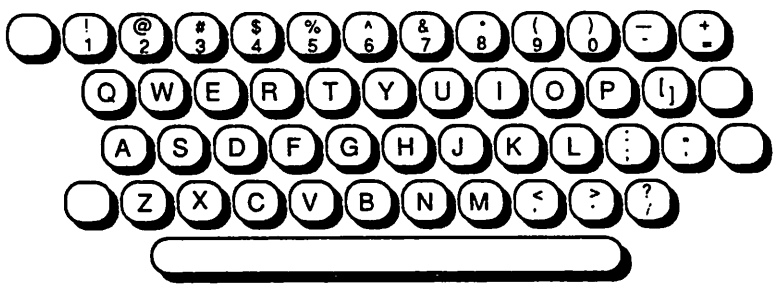
by Virginia DeG Russell

When we talk about the Dvorak keyboard, why are we always talking about the ANSI X4.22-1983 standard? Why does it make a difference that the Dvorak keyboard is standardized?

In November 1982, the Dvorak keyboard was accepted as the "alternate" keyboard for alphanumeric machines. In the office equipment industry, it is very important to have products standardized. People who use an IBM keyboard, for example, would find it very difficult to switch to a DEC or Apple or Wang keyboard without some standard to govern the placement of the keys. One of the duties of the American National Standards Institute is to appoint committees to work on defining products, including keyboards, to make it easier for users to switch among different brands of similar products. Both the Qwerty and Dvorak keyboard layouts have standardized by ANSI to provide a guide to manufacturers when designing keyboards.



The ANSI-standard Dvorak Layout



The ANSI-standard Qwerty layout

Both diagrams © 1988 by ***Dvorak Developments***

The fact that the Dvorak keyboard has gone through this standardization process helps the Dvorak gain respect in industry. Apple, IBM and Wang are much more likely to add the Dvorak to their machines if the Dvorak has ANSI's sanction. The ANSI stamp of approval says that a product is worth considering or is an accepted entity. More than 10,000 ANSI standards cover everything from 8 1/2 x 11 inch paper to the size and strength of shower doors. (In Europe, the International Standard Organization (ISO) serves a similar purpose. Their consideration of the Dvorak layout may begin soon – the ISO WG9 subcommittee, which is the equivalent of ANSI's X3V1.9 subcommittee, meets in November. I will report on the meeting in the next issue of ***Dvorak Developments***.)

The subcommittee is responsible for anything having to do with symbols or icons on computers, including keyboards on computers, telephones and calculators

Every five years, each standard is reviewed and, if necessary, revised to reflect new technologies. The Dvorak standard is currently in review by the X3V1.9 committee (the X3 committee absorbed the X4 committee which originally passed the Dvorak standard. The X3V1 subcommittee is responsible for anything having to do with symbols or icons on computers, including keyboards on computers, telephones and calculators). Currently, the Dvorak standard is simply awaiting approval by the Board of Standards Review before being finalized. The first time the Dvorak went through the standards process, it took twelve years; the current reapproval only took one year. This says something about the progress of the Dvorak keyboard.

Virginia Russell is the Director of Dvorak International (formerly the Dvorak International Federation) and is a working member of the ANSI X3V1.9 subcommittee. Other members represent other aspects of the computer industry, including IBM, Pitney Bowes, Xerox and Hewlett Packard.

Back Issues

- **Spring 1987.** EZ-50 typewriter wins *DvDv* 'Product of the Year' award. Randy Cassingham's column on the Maxi-Switch "Memory Pro" keyboards, DIF, Dvorak PC, and educator interest in the Dvorak. Product overview on SmartKey II Plus and XtraKey (conversion programs for CP/M computers). Listing of one new Dvorak product.
- **Winter 1987.** DvDv Celebrates its 50th Issue. Randy Cassingham's column on PCKey conversion program. Product overview of SureStroke/Dvorak (conversion/tutorial package for IBM PCs). Listing of one new Dvorak product.
- **Spring 1988.** Description of the process of 'diffusion' which innovations (like the Dvorak keyboard) must go through before being adopted. Randy Cassingham's column on Dvorak filters in MS-DOS and WordPerfect, and the illustrated entries on the Dvorak in the new Random House dictionary. Product overview on MacQwerty. 2 bibliographic entries. Listing of two new Dvorak products.

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List of Dvorak Products Updated

We've just updated the listing of all of the Dvorak products from the "Product Alert" mentions in *Dvorak Developments*. The list also outlines all of the available back issues of the newsletter. For a free copy, send a stamp and your address to Dvorak Products, PO Box 1895, Upland CA 91785.

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